

COURSE OUTLINE

Course Code / Title : HS3002 Understanding Social Statistics

Pre-requisites : HS1001 Person and Society
HS2002 Doing Social Research

No. of AUs. 3

Contact Hours 39

Course Aims

This course introduces you to statistical methods for describing, analysing, and interpreting data in social sciences. Throughout the course, you are expected to get a firm understanding of statistical concepts, applications of statistical methods, and interpretation of the results of statistical analyses. You will learn to summarize sample and population data, to infer characteristics of a population from sample observations, and to summarize relationships between variables.

The course will introduce statistical ideas, vocabulary, and rules which may be new to many of you. The pace of this course is moderate but relentless, so it is essential that you do not fall behind. You will have something to prepare for class every week. The quizzes and homework are scheduled to encourage steady, consistent application on your part.

Intended Learning Outcomes (ILO)

By the end of the course, you should be able to:

1. Recognize the importance of data collection, identify limitations in data collection methods, and determine how they affect the scope of inference.
2. Have a conceptual understanding of the unified nature of statistical inference.
3. Apply estimation and testing methods to analyze single variables or the relationship between two variables in order to understand natural phenomena and make data-based decisions.
4. Model numerical response variables using a single or multiple explanatory variables.
5. Interpret results correctly, effectively, and in context without relying on statistical jargon.
6. Critique data-based claims and evaluate data-based decisions.
7. Use statistical software to summarize data numerically and visually, and to perform data analysis.

Course Content

Week / Session	Topics / Themes
Week 1	Introduction to data and study design
Week 2	Causality and experimental design
Week 3	Summarizing and visualizing data
Week 4	Distributions of random variables
Week 5	Foundations for inference
Week 6	Inference for categorical data
Week 7	Inference for numerical data
Week 8	Linear regression
Week 9	Logistic regression
Week 10	Experimental and quasi-experimental designs
Week 11	Big data and ethics
Week 12	Introduction to statistical machine learning
Week 13	Future of quantitative social research

Course Assessment

CA1	Quiz	: 15%
CA2	Homework	: 30%
CA3	Class Participation	: 5%

Final Examination : 50%

Total **100%**